

Weather of 1998

Incredible Weather Year with near-record warmth, record El Nino, spring flooding, violent tornadoes, extreme fall drought

1998 was one of the wildest and most surreal weather years ever. No year will ever stand out quite like 1998 for its series of wild weather events and streaks of excessive precipitation, followed by excessive drought. 1998 was the warmest year globally, and ranked 4th warmest ever in LaVale. This warmth was largely attributed to the strongest El Nino in history and a positive phase of the North Atlantic Oscillation (NAO). 1998 also featured a couple of unprecedented severe weather outbreaks at the beginning of the meteorological summer, which included a deadly F3 tornado in Salisbury PA on May 31st and a violent F4 twister in Frostburg on June 2nd.

New Year's morning had the season and year's coldest temperature of 1 F. In fact, it was a record low for the date. However, a rapid January thaw followed, quickly melting the late December 1997 snows with temperatures well into the 60s by the 3rd. The 4th had a high of 63. Heavy rains, totaling 1.88", fell on the 7th-8th. A minor ice storm blanketed the area on the 15th, and a bigger winter storm brought 4" of snow and ice, and a total of 1.42" of precipitation, on the 22nd-23rd. Another winter storm dropped 5" of wet snow on the 28th-29th. Meanwhile, January 16th began an incredible 54-day streak without any sub-freezing high temperatures, a streak that wasn't snapped until a late season cold snap with 31 on March 11th.

Like January, February was also mild and wet. Heavy snow, 7 inches, fell on the 4th from a strong Nor' Easter that brought 1.85" of precipitation on the 4th-5th and high winds. The snow turned to rain on the 5th. Ice on the 16th turned to rain on the 17th-18th, with another 1.21" of precipitation. Another major storm brought heavy snow, ice and rain, totaling 1.79 inches of precipitation and 2.5" of snow/ice on the 23rd-24th. The month ended with a surprise thunderstorm on the 28th. February 1998 finished as the second wettest February with 5.26" of precipitation, and also ranked 3rd warmest in mean low temperatures (28.6).

Above normal precipitation fell in March, while temperatures were near normal, with a late-season cold snap offset by a spectacular summer-like warm-up at the end of the month. 1.85" of rain fell on the 8th-9th. Following a cold front, temperatures on the 11th and 12th failed to climb above freezing, and a chilly low of 10 was recorded on the 13th. 1.72" of rain fell on the 20th-21st. The final five days of March were all in the 80s. The high of 85 on the 31st tied the all-time March record. The high in Cumberland reached 90.

April was cool, with a high of only 75 (after 85 in March), and rather wet, ranking as the 3rd wettest April with 6.80", the wettest month of 1998. 2.13" of rain fell from the 8th-10th, 1.70" on the 9th. Some flooding resulted from heavy rains on the 19th, when 2.69" fell from another slow-moving cold front. Another front passed through on the 26th, dropping temperatures into the 30s from the 27th-29th. Another .80" of rain fell on the 30th to round out a very active weather month.

May was quite unusual. The month began very wet. 11 of the first 12 days had measurable rainfall, 10 days consecutive from April 30th- May 9th. An upper-level low on the 4th-5th triggered slow-moving thunderstorms that produced wind damage, flash flooding and hail. Pea-sized hail fell from a very intense thunderstorm late on the evening of the 4th. This storm dropped 1 to 2 inches in an hour just to our west, causing flooding. Then on the 5th, a wild thunderstorm blew up directly our station, dumping 1" of rain in only 15 minutes, 1.6" in 30 minutes and 2.37" in one hour from 6-7pm, an hourly record. 2.73" fell, almost all of it in just over an hour. This deluge severely flooded our basement with over a foot of water, causing hundreds of dollars in damage. Dime-sized hail fell for 15 minutes, covering the ground and turning everything white. Lighting cracked overhead continuously. The storm was absolutely unreal.

The weather pattern after the 12th suddenly dried out and warmed up dramatically. 11 of the final 17 days hit the 80s, with a hot high of 91 on the 31st. Late that evening, a violent supercell thunderstorm unleashed a deadly F3 tornado on Salisbury PA, just northwest, and caused wind damage in Flintstone. 22 tornadoes hammered Pennsylvania. While we dodged that bullet, another strong storm cell about 3 hours later, right at midnight, dumped 1.42" of rain, most of it in only 10 minutes, and scattered wind damage in LaVale. Spring 1998 was the 2nd wettest spring on record with 17.29 inches of rainfall.

Only two evenings later, on June 2nd, another round of violent supercell thunderstorms hammered the area, with quarter-sized hail, torrential rain, an incredible lightning display, and three tornadoes within two hours, the final one a vicious F4 twister that ravaged Frostburg, Zihlman, Eckhart Mines and Clarysville with 210 mph winds, the strongest twister to date in the entire state of Maryland.

The F4 Frostburg Tornado destroyed 29 homes and businesses and severely damaged hundreds more, and caused over \$5 million in damage. The twister traveled amazing 48 miles with a width of 3 football fields!. Everything in its path was obliterated. Debris from the twister, including a high school diploma and a bill in a basement file cabinet, was found 100 miles downstream in Sterling, VA. The June 2nd severe weather outbreak was unparalleled in recent history. 23 more tornadoes hit Pennsylvania.

More severe storms ripped the region on the 16th. We were spared the worst – while straight-line wind damage was widespread, multiple tornadoes zeroed in on nearby towns such as Hagerstown, MD and Johnstown, PA. More tornadoes hit Somerset and Cambria counties to our north on the 30th. Frequent thunderstorms led to 5.77” of precipitation in June, completing the wettest first half of a year ever with 33.07 inches. June temperatures ranged from a chilly 41 on the 9th to a hot 95 on the 25th.

July began a stretch of much quieter weather. Only 3 days reached 90 or higher. Little rain fell until an overnight deluge of 2.17” on the 30th-31st. August was also very quiet and dry. 1.58” of total rainfall ranked it 3rd driest on record. However, heavy storms hit nearby, as Frostburg weather observer Greg Latta reported 2.50” from a thunderstorm on the 15th.

September brought near-record heat, with 5 days 90 or higher, more than July and August combined. The high hit 94 on the 14th. Several thunderstorms rumbled through, and even a rare 5.2-magnitude earthquake rattled parts of PA and OH on the 25th. While September was a hot month, October began chilly, with a low of 28 and a hard frost on the 2nd. Seven consecutive days from the 3rd-9th had measurable rainfall, but then it turned bone dry. November was the driest on record, and the second driest month ever with only .19” of rainfall. An Indian summer at the beginning of December, which was also very dry with .73” of precipitation, the 4th driest December, brought record highs, peaking at 74 on the 6th. December was also 5th warmest with a mean of 38.8 F. The extreme drought caused area lakes and reservoirs to dry up. Only 9.56” of precipitation fell during the entire second half of 1998 – the driest second half of a year, immediately following the wettest first half of a year ever. This is obviously quite unusual, but then again, the entire weather of year of 1998 was anything but usual.

1998 Weather Statistics

1998 Monthly and Annual Climate Summary LaVale, MD, Allegany County Observer Nate Mullins Station Observation Time: Midnight Lat: 39.657780°, Long: - 78.821871°, Elevation 1016'										
Month	Temperature, ° F							Number of days		
	Mean Max	Mean Min	Mean Temp	Max Temp	Date	Min Temp	Date	Max ≥ 90	Max ≤ 32	Min ≤ 32
Jan	43.6	27.5	35.6	63	4	1	1	0	3	25
Feb	44.0	28.6	36.3	60	27	14	1	0	0	19
Mar	51.5	30.7	41.1	85	31	10	13	0	2	18
Apr	62.0	37.7	49.9	75	25	25	6	0	0	7
May	76.0	52.9	64.4	91	31	45	22	1	0	0
Jun	79.2	58.1	68.6	95	25	41	9	7	0	0
Jul	84.2	58.9	71.6	94	28	45	11	3	0	0
Aug	82.5	57.6	70.0	90	23	44	20	1	0	0
Sep	81.2	52.9	67.1	94	14	36	24	5	0	0
Oct	64.0	42.0	53.0	81	18	28	2	0	0	2
Nov	53.2	34.2	43.7	68	30	22	5	0	0	10
Dec	48.8	28.7	38.8	74	6	11	25	0	4	23
Year	64.2	42.5	53.4	95	6/25	1	1/1	17	9	104

Precipitation, Inches			Number of days				Snow/ice, Inches			
Month	Total Precip	Max Day	Date	> 0.01"	> 0.10"	> 0.50"	> 1.00"	Total Snow	Max Day	Date
Jan	4.75	1.31	23	13	8	4	1	10.5	3.0	28*
Feb	5.26	1.55	23	10	10	4	2	9.7	7.0	4
Mar	4.45	1.35	8	10	6	5	1	0.5	0.3	24
Apr	6.80	2.69	19	12	8	4	2	-	-	
May	6.04	2.73	5	16	11	2	1	-	-	
Jun	5.77	1.59	2	19	12	3	1	-	-	
Jul	3.64	1.50	30	8	4	3	1	-	-	
Aug	1.58	0.93	10	9	2	1	0	-	-	
Sep	2.00	0.40	21	10	7	0	0	-	-	
Oct	1.42	0.46	8	10	4	0	0	-	-	
Nov	0.19	0.10	26	3	1	0	0	-	-	
Dec	0.73	0.31	10	9	2	0	0	1.4	0.7	17
Year	42.63	2.73	5/5	129	75	26	9	22.1	7.0	2/4
Note: * = also occurred on earlier dates that month										
Month	Number of days with									
	Fog	Sleet	Glaze	Thunder	Hail	Dmg wind				
Jan	12	0	3	0	0	0				
Feb	0	3	1	1	0	0				
Mar	5	0	0	0	0	0				
Apr	0	0	0	2	0	0				
May	8	0	0	5	2	0				
Jun	9	0	0	13	1	2				
Jul	3	0	0	2	0	0				
Aug	4	0	0	6	0	0				
Sep	2	0	0	5	0	0				
Oct	5	0	0	0	0	0				
Nov	0	0	0	0	0	0				
Dec	3	0	1	0	0	0				
Year	51	3	5	34	3	2				